PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner
US Department of Commerce
United States Patent and Trademark Office, PCT
2011 South Clark Place Room CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 18 December 2000 (18.12.00)	
International application No. PCT/US00/11373	**Applicant's or agent's file reference** RCA89470
International filing date (day/month/year) 28 April 2000 (28.04.00)	**Priority date** (day/month/year) 30 April 1999 (30.04.99)
Applicant SIMPSON, Wanda, Green et al	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

17 November 2000 (17.11.00)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer Diana Nissen
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
RCA89470		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/US 00/ 11373	28/04/2000	30/04/1999
Applicant		
THOMSON LICENSING S.A.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   [ ] the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

   [ ] contained in the international application in written form.

   [ ] filed together with the international application in computer readable form.

   [ ] furnished subsequently to this Authority in written form.

   [ ] furnished subsequently to this Authority in computer readble form.

   [ ] the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   [ ] the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. [ ] **Certain claims were found unsearchable** (See Box I).

3. [ ] **Unity of invention is lacking** (see Box II).

4. With regard to the **title,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 4

   [X] as suggested by the applicant.

   [ ] because the applicant failed to suggest a figure.

   [ ] because this figure better characterizes the invention.

   [ ] None of the figures.

INTERNATIONAL SEARCH REPORT

Inter[illegible]pplication No
PCT/US 00/11373

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N5/445 H04N7/173 H04N7/088 //H04H9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 00975 A (THOMSON CONSUMER ELECTRONICS INC.) 8 January 1998 (1998-01-08) page 2, line 13 -page 3, line 37 page 5, line 5 - line 31 page 6, line 30 -page 11, line 33 page 18, line 12 - line 32 ---	1-7
X	US 4 888 638 A (BOHN J.) 19 December 1989 (1989-12-19) the whole document ---	1-7
Y	US 5 710 601 A (MARSHALL C. ET AL) 20 January 1998 (1998-01-20) column 3, line 24 -column 4, line 32 --- -/--	1-7

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11 August 2000	21/08/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Verschelden, J

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 94 13107 A (DISCOVERY COMMUNICATIONS INC.) 9 June 1994 (1994-06-09) page 26, line 22 -page 29, line 7	1-7
A	US 5 880 768 A (LEMMONS T. ET AL) 9 March 1999 (1999-03-09) column 19, line 24 - line 54	1-7
A	US 5 623 613 A (ROWE K. ET AL) 22 April 1997 (1997-04-22) column 7, line 16 -column 8, line 67	1-7
A	US 5 600 364 A (HENDRICKS J. ET AL) 4 February 1997 (1997-02-04) column 29, line 43 -column 31, line 63	1-7
A	US 5 559 548 A (DAVIS B. ET AL) 24 September 1996 (1996-09-24) column 10, line 11 -column 17, line 15	1-7
A	US 5 838 314 A (NEEL D. ET AL) 17 November 1998 (1998-11-17) column 17, line 26 -column 22, line 2 column 24, line 62 - line 64	1-7
P,X	WO 99 29109 A (STARSIGHT TELECAST INC.) 10 June 1999 (1999-06-10) page 2, line 6 - line 10 page 12, line 20 -page 14, line 29	1-7

INTERNATIONAL SEARCH REPORT

information on patent family members

Inter. Application No
PCT/US 00/11373

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WO 9800975 A	08-01-1998	US 5929850 A	27-07-1999
		AU 3648197 A	21-01-1998
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information on patent family members

Inter. Application No
PCT/US 00/11373

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INTERNATIONAL SEARCH REPORT

information on patent family members

Inter[redacted]Application No
PCT/US 00/11373

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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US 5838314 A	17-11-1998	NONE	
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
RCA89470		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US00/11373	28/04/2000	30/04/1999
International Patent Classification (IPC) or national classification and IPC H04N5/445		
Applicant THOMSON LICENSING S.A.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☐ Certain documents cited
   - VII ☒ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
17/11/2000	24.07.2001
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Schoeyer, M Telephone No. +49 89 2399 2136

Form PCT/IPEA/409 (cover sheet) (January 1994)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/11373

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:
Description, pages:

2-8	as originally filed			
1,1a	as received on	25/05/2001	with letter of	23/05/2001

Claims, No.:

1-5	as received on	25/05/2001	with letter of	23/05/2001

Drawings, sheets:

1/5-5/5	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   - ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
   - ☐ the language of publication of the international application (under Rule 48.3(b)).
   - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   - ☐ contained in the international application in written form.
   - ☐ filed together with the international application in computer readable form.
   - ☐ furnished subsequently to this Authority in written form.
   - ☐ furnished subsequently to this Authority in computer readable form.
   - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
   - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)
   see separate sheet

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-5
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-5
Industrial applicability (IA)	Yes:	Claims	
	No:	Claims	1-5

2. Citations and explanations
   see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

I. Basis

No basis can be found in the application as originally filed for the feature of claim 1 which states that the advertisement is displayed dynamically. Thus the requirements of Rule 70.2(c) PCT have not been met. Consequently it will be assumed for the report that this amendment has not been made.

V. Statement under Article 35(2) PCT

Reference is made to the following documents:

D1: WO-A-98 00975;
D2: US-A-5 710 601.

Article 33(3) PCT:

The requirements of Article 33(3) PCT are not fulfilled because the subject-matter of claim 1 lacks inventive step (see also above under I.). This will be set out below:

Document D1 (see page 3, lines 6-35; page 18, line 19-32) discloses a method of displaying targeted advertisements in response to consumer navigation in a video apparatus, comprising the steps of:

- receiving a plurality of advertisements through an auxiliary source in a television apparatus;
- storing the receiving advertisements along with their descriptor;
- monitoring highlighting navigation of a user; and
- displaying a selected advertisement from said stored advertisements in response to the navigation monitoring.

The difference in subject-matter of claim 1 and the subject-matter of D1 lies therein that claim 1 specifically relates to an electronic program guide. However document D1 illustrates figures 17 and 18 a channel selection guide comprising navigation controlled advertising. Since advertisements are a special form of

information and Information in combination with program guides is well known to the skilled person (see D2, e.g figures 7 and 8; abstract), the subject-matter of claim 1 is considered to be obvious.

Dependent claims:

Also the subject-matter of the dependent claims 2-5 is considered to be obvious because the subject-matter of these claims either forms part of the prior art or forms part of the common general knowledge of the skilled person, as set out below:

- descriptor comprises a channel descriptor (as in claim 2), -see D1 (page 18, lines 18-32; figure 17);
- selection of advertisement for display (as in claim 3), -see D1(page 18, lines 29-32);
- use of time descriptor (as in claim 4), -common general knowledge (see also D2 figure 8);
- matching time and channel descriptor (as in claim 5), -see D2 (figure 8);

Article 33(4) PCT

The requirements of Article 33(4) PCT have been met because the subject-matter of claims 1-5 is applicable in the field of electronic program guides.

VII. Certain Defects

1. The Independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

ADVERTISEMENT SELECTION BASED ON USER ACTION IN AN ELECTRONIC PROGRAM GUIDE

FIELD OF INVENTION

The present invention generally relates to the field of electronic program guide processing and display, and more particularly, to a system and method of automatically displaying a targeted advertisement while a user is navigating within an electronic program guide.

BACKGROUND OF INVENITON

Electronic devices such as televisions or VCRs require a control system that includes a user interface system. Typically, a user interface system provides information to a user and simplifies use of the device. One example of a user interface is an electronic menuing system in a television system. The menuing system allows a user to easily interact with and control a television system that is becoming more complex.

An example of a menuing system which allows user to navigate in today's television environment where there are many channels is an Electronic Program Guide (EPG). EPGs are very useful for providing program information while a consumer is watching TV. These EPGs are generally supported by advertising displayed along with the program information. These advertisements are sent as part of the EPG data and are displayed in a program guide screen based on time descriptors in the advertisement. These time descriptors are used by the receiver to control when the advertisement is made visible in the guide display.

In addition, WO 98/00975 describes a system which allows a user to select linked still images displayed on the television screen to view the desired information. When a linked still image is selected, the television displays the captured still video image corresponding to the selection. Also, U.S. Pat. No. 5,710,601 describes a system that in response to a user selecting a program within an electronic program guide will play a short video clip of that selected program. These systems clearly require that a user to proactively select the information in order for that information to be displayed. None of the systems describe a targeted advertisement to be dynamically displayed based on the system automatically monitoring the navigation of the user. That is the user has to merely focusing or highlighting a program in an electronic program guide, without actually selecting the program for a targeted advertisement associated with that program to be displayed.

SUMMARY OF THE INVENTION

The present inventors recognized that the above method provides for poor control of advertisement exposure. It is the responsibility of the distribution system to define, using time descriptors, when an ad is to be displayed, without knowing any habit of the viewers. Furthermore, the time descriptors will not allow the presentation of the ads to be synchronized with the consumer's navigation within a program guide display.

The present inventors recognize that, therefore, it is desirable to be able to selectively show a targeted advertisement when a user is using an EPG in order to increase ad effectiveness. Therefore, a method of displaying a targeted

CLAIMS

1. A method of displaying a targeted advertisement dynamically along with an electronic program guide in response to user navigation in a video apparatus, comprising the steps of:

receiving a plurality of advertisements (501);

storing the received advertisements (504);

monitoring highlighting of one of a plurality of programs by a user in the electronic program guide (405); and

displaying a corresponding advertisement selected from said plurality of advertisements in response to the user highlighting one of the plurality of programs in the electronic program guide (406;407).

2. The method of claim 1 further comprising the step of receiving a channel descriptor for a respective advertisement.

3. The method of claim 2 wherein the displaying step displays the corresponding advertisement if the associated channel descriptor matches the channel highlighted by the user in the electronic program guide.

4. The method of claim 3 further comprising the step of receiving a time descriptor.

5. The method of claim 4 wherein the displaying step displays the corresponding advertisement if the associated channel descriptor matches the channel highlighted by the user in the electronic program guide and the time descriptor matches a current time.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
RCA89470		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US00/11373	28/04/2000	30/04/1999
International Patent Classification (IPC) or national classification and IPC H04N5/445		
Applicant THOMSON LICENSING S.A.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☐ Certain documents cited
   - VII ☒ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
17/11/2000	24.07.2001
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Schoeyer, M Telephone No. +49 89 2399 2136

Form PCT/IPEA/409 (cover sheet) (January 1994)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/11373

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:
Description, pages:

2-8	as originally filed			
1,1a	as received on	25/05/2001	with letter of	23/05/2001

Claims, No.:

1-5	as received on	25/05/2001	with letter of	23/05/2001

Drawings, sheets:

1/5-5/5	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   - ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
   - ☐ the language of publication of the international application (under Rule 48.3(b)).
   - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   - ☐ contained in the international application in written form.
   - ☐ filed together with the international application in computer readable form.
   - ☐ furnished subsequently to this Authority in written form.
   - ☐ furnished subsequently to this Authority in computer readable form.
   - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
   - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)
   see separate sheet

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-5
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-5
Industrial applicability (IA)	Yes:	Claims	
	No:	Claims	1-5

2. Citations and explanations
   see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

I. Basis

No basis can be found in the application as originally filed for the feature of claim 1 which states that the advertisement is displayed dynamically. Thus the requirements of Rule 70.2(c) PCT have not been met. Consequently it will be assumed for the report that this amendment has not been made.

V. Statement under Article 35(2) PCT

Reference is made to the following documents:

D1: WO-A-98 00975;
D2: US-A-5 710 601.

Article 33(3) PCT:

The requirements of Article 33(3) PCT are not fulfilled because the subject-matter of claim 1 lacks inventive step (see also above under I.). This will be set out below:

Document D1 (see page 3, lines 6-35; page 18, line 19-32) discloses a method of displaying targeted advertisements in response to consumer navigation in a video apparatus, comprising the steps of:

- receiving a plurality of advertisements through an auxiliary source in a television apparatus;
- storing the receiving advertisements along with their descriptor;
- monitoring highlighting navigation of a user; and
- displaying a selected advertisement from said stored advertisements in response to the navigation monitoring.

The difference in subject-matter of claim 1 and the subject-matter of D1 lies therein that claim 1 specifically relates to an electronic program guide. However document D1 illustrates figures 17 and 18 a channel selection guide comprising navigation controlled advertising. Since advertisements are a special form of

information and Information in combination with program guides is well known to the skilled person (see D2, e.g figures 7 and 8; abstract), the subject-matter of claim 1 is considered to be obvious.

Dependent claims:

Also the subject-matter of the dependent claims 2-5 is considered to be obvious because the subject-matter of these claims either forms part of the prior art or forms part of the common general knowledge of the skilled person, as set out below:

- descriptor comprises a channel descriptor (as in claim 2), -see D1 (page 18, lines 18-32; figure 17);
- selection of advertisement for display (as in claim 3), -see D1(page 18, lines 29-32);
- use of time descriptor (as in claim 4), -common general knowledge (see also D2 figure 8);
- matching time and channel descriptor (as in claim 5), -see D2 (figure 8);

Article 33(4) PCT

The requirements of Article 33(4) PCT have been met because the subject-matter of claims 1-5 is applicable in the field of electronic program guides.

VII. Certain Defects

1. The Independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

ADVERTISEMENT SELECTION BASED ON USER ACTION IN AN ELECTRONIC PROGRAM GUIDE

FIELD OF INVENTION

The present invention generally relates to the field of electronic program guide processing and display, and more particularly, to a system and method of automatically displaying a targeted advertisement while a user is navigating within an electronic program guide.

BACKGROUND OF INVENITON

Electronic devices such as televisions or VCRs require a control system that includes a user interface system. Typically, a user interface system provides information to a user and simplifies use of the device. One example of a user interface is an electronic menuing system in a television system. The menuing system allows a user to easily interact with and control a television system that is becoming more complex.

An example of a menuing system which allows user to navigate in today's television environment where there are many channels is an Electronic Program Guide (EPG). EPGs are very useful for providing program information while a consumer is watching TV. These EPGs are generally supported by advertising displayed along with the program information. These advertisements are sent as part of the EPG data and are displayed in a program guide screen based on time descriptors in the advertisement. These time descriptors are used by the receiver to control when the advertisement is made visible in the guide display.

SUMMARY OF THE INVENTION

The present inventors recognized that the above method provides for poor control of advertisement exposure. It is the responsibility of the distribution system to define, using time descriptors, when an ad is to be displayed, without knowing any habit of the viewers. Furthermore, the time descriptors will not allow the presentation of the ads to be synchronized with the consumer's navigation within a program guide display.

The present inventors recognize that, therefore, it is desirable to be able to selectively show a targeted advertisement when a user is using an EPG in order to increase ad effectiveness. Therefore, a method of displaying a targeted

CLAIMS

1. A method of displaying a targeted advertisement on an electronic program guide based on consumer navigation, comprising the steps of:

receiving a plurality of advertisements through an auxiliary source in a television apparatus.

storing the received advertisements along with their respective descriptor;

monitoring navigation of a user of the electronic program guide; and

displaying a selected advertisement from said stored advertisements in response to the navigation monitoring.

2. The method of claim1 wherein the descriptor comprises a channel descriptor.

3. The method of claim 2 wherein the advertisement is selected for displayed in the displaying step when the channel descriptor of the selected advertisement matches the channel highlighted by the user.

4. The method of claim 2 wherein the descriptor further comprises a time descriptor.

5. The method of claim 4 wherein the advertisement is selected for displayed in the displaying step when the channel descriptor of the selected advertisement matches the channel highlighted by the user and the time descriptor of the selected advertisement matches a current time.

6. The method of claim 1 wherein the auxiliary source in the receiving step is through a television communication channel.

7. A method of displaying a targeted advertisement on an electronic program guide based on consumer navigation, comprising the steps of:

storing a plurality of preprogrammed advertisements along with their respective descriptor in a television apparatus;

monitoring navigation of a user of the electronic program guide; and

displaying a selected advertisement from the stored advertisements in response to the navigation monitoring.

PATENT COOPERATION TREATY

EXPRESS MAIL EL 90[illegible]321210 US

30 2001

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

Tripoli, Joseph S.
THOMSON MULTIMEDIA LICENSING INC.
P.O. Box 5312
2 Independence Way
Princeton, New Jersey 08543-5312
ETATS-UNIS D'AMERIQUE

FYI

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing *(day/month/year)*	24.07.2001
Applicant's or agent's file reference RCA89470	**IMPORTANT NOTIFICATION**

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US00/11373	28/04/2000	30/04/1999

Applicant
THOMSON LICENSING S.A.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Event	OA Final Cty Sel. to Davda by
Deadline	30 Aug 2001
Entered	Authorized officer DPF 8/8/01

Name and mailing address of the IPEA/

European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Schalinatus, D

Tel.+49 89 2399-8242

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(71) Applicant *(for all designated States except US)*: **THOMSON LICENSING S.A.** [FR/FR]: 46, quai Alphonse Le Gallo, F-92648 Boulogne Cedex (FR).

(72) Inventors; and

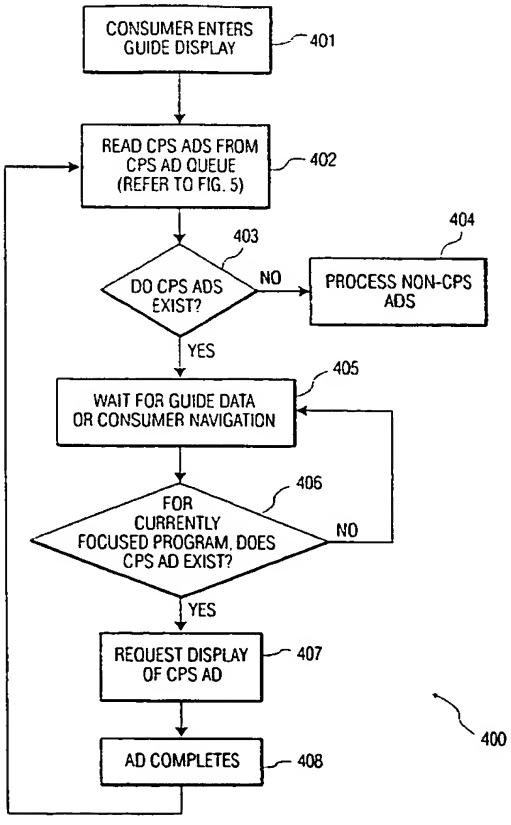
(75) Inventors/Applicants *(for US only)*: **SIMPSON, Wanda, Green** [US/US]: 8728 Bergeson Drive, Indianapolis, IN 46278 (US). **JOHNSON, Michael, Wayne** [US/US]: 7316 Cobblestone West Drive, Indianapolis, IN 46236 (US).

(74) Agents: **TRIPOLI, Joseph, S.** et al.; Thomson Multimedia Licensing Inc., P.O. Box 5312, 2 Independence Way, Princeton, NJ 08543-5312 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

[Continued on next page]

(54) Title: ADVERTISEMENT SELECTION BASED ON USER ACTION IN AN ELECTRONIC PROGRAM GUIDE



(57) Abstract: A method of displaying a targeted advertisement on an electronic program guide based on consumer navigation is presented. A plurality of advertisements are received in a television apparatus through an auxiliary source. The received advertisements are stored along with their respective descriptor. Navigation of a user of the electronic program guide is monitored. Then a selected advertisement from the stored advertisements is displayed in response to the navigation monitoring.

WO 00/67473 A1

(84) **Designated States** *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

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6 June 2002

(15) **Information about Correction:**
see PCT Gazette No. 23/2002 of 6 June 2002, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

ADVERTISEMENT SELECTION BASED ON USER ACTION IN AN ELECTRONIC PROGRAM GUIDE

FIELD OF INVENTION

The present invention generally relates to the field of electronic program guide processing and display, and more particularly, to a system and method of automatically displaying a targeted advertisement while a user is navigating within an electronic program guide.

BACKGROUND OF INVENITON

Electronic devices such as televisions or VCRs require a control system that includes a user interface system. Typically, a user interface system provides information to a user and simplifies use of the device. One example of a user interface is an electronic menuing system in a television system. The menuing system allows a user to easily interact with and control a television system that is becoming more complex.

An example of a menuing system which allows user to navigate in today's television environment where there are many channels is an Electronic Program Guide (EPG). EPGs are very useful for providing program information while a consumer is watching TV. These EPGs are generally supported by advertising displayed along with the program information. These advertisements are sent as part of the EPG data and are displayed in a program guide screen based on time descriptors in the advertisement. These time descriptors are used by the receiver to control when the advertisement is made visible in the guide display.

SUMMARY OF THE INVENTION

The present inventors recognized that the above method provides for poor control of advertisement exposure. It is the responsibility of the distribution system to define, using time descriptors, when an ad is to be displayed, without knowing any habit of the viewers. Furthermore, the time descriptors will not allow the presentation of the ads to be synchronized with the consumer's navigation within a program guide display.

The present inventors recognize that, therefore, it is desirable to be able to selectively show a targeted advertisement when a user is using an EPG in order to increase ad effectiveness. Therefore, a method of displaying a targeted

advertisement on an electronic program guide based on consumer navigation is presented, comprising the steps of:

receiving a plurality of advertisements through an auxiliary source in a television apparatus.

storing the received advertisements along with their respective descriptor;

monitoring navigation of a user of the electronic program guide;

displaying a selected advertisement from said stored advertisements in response to the navigation monitoring.

BRIEF DESCRIPTION OF THE DRAWING

In the drawing:

Figure 1 shows an exemplary architecture of a television system of the present invention.

Figure 2 shows an exemplary manner in which auxiliary information may be displayed with the program content associated with a television signal.

Figure 3 shows an exemplary manner in which auxiliary information may be displayed with an electronic program guide.

Figure 4 shows an exemplary flow diagram according to the present invention.

Figure 5 is also an exemplary flow diagram according to the present invention.

DETAILED DESCRIPTION

An exemplary embodiment of the present invention is shown in Fig. 1. The system comprises a video processing apparatus 101 capable of communicating television program signals and electronic program guide (EPG) signals each enhanced with auxiliary information, such as advertisements, by a television communication channel 103 such as terrestrial broadcast, cable distribution, satellite broadcast or the like. An example of such a video processing apparatus may be a satellite receiver set-top box, similar to that designed and manufactured by Thomson Consumer Electronics, of Indianapolis, Indiana, U.S.A., for receiving DirecTV™ satellite service provided by Hughes Electronics, and is described in detail, for example, in a PCT application bearing International Publication Number WO 98/56173.

The system shown in Fig. 1 receives the enhanced television program and EPG signals via a video server 102, which combines signal sources representing both television program signal source 104 and electronic program guide signal source 105. The television receiver 101 displays the auxiliary information on a monitor 106 connected to the television receiver 101 in association with the displayed video portion corresponding to a selected television program signal and the displayed EPG derived from the EPG signal. Figure 2 shows the manner in which auxiliary information may be displayed with the program content associated with a television signal; and Figure 3 shows the manner in which auxiliary information may be displayed with an electronic program guide.

When the auxiliary information such as advertisement is selected by a user via a control system of a television receiver such as a remote control system119, the system communicates information concerning the selection from the television receiver via a back channel such as a modem 106, to a "store and forward" server 110.

The store and forward server 110 collects and categorizes the selection information 114 from receiver 101 into packages related to the origin of the auxiliary information, and at a later time communicates the selected information back to a designated party, such as the originator of the auxiliary information. The time delay allows for the selection of the transmission times (e.g., at night) to minimize costs. The server 110 also determines the signal source associated with the selected auxiliary information (i.e., the source of the television signal or the EPG signal) and the number of times the auxiliary information has been selected. The number is used by the operator of the server to determine a fee to be paid, e.g., by the originator of the auxiliary information. This information may also be used to selectively determine the type of auxiliary information to be transmitted to or displayed for the user.

The selection information 114 communicated to the store and forward server from a television receiver may include identification data 113 for identifying the television receiver 101 from which the selection information 114 was sent. Such a provision allows the originator of the auxiliary information to identify and communicate with the consumers making the selection for the

purposes of providing additional information and making sales. In a related feature, the provision of identifying the television receiver through the back channel may allow an audience survey company to monitor the viewing habits of the consumers.

Various signal formats for embedding the auxiliary information in the television program signals and EPG signals are available. For example, a protocol known as ATVEF proposed by the Advance Television Enhancement Forum, an alliance of television communication and computer companies is advantageous. The protocol is based on the HTML (Hypertext Markup Language) utilized in the Internet. The ATVEF protocol may be used with both analog and digital television systems. Other protocols may be used. In an analog television system, the auxiliary information may be included in the vertical blanking interval (VBI) of the television program signal, together with the EPG signal. In a digital television system the auxiliary information may be "packetized" and inserted into the digital data stream including the television program data and EPG data.

Another tier or feature level of the television system may also include provisions for communicating E-mail information, e.g., via the store and forward sever, also enhanced with auxiliary information, such as advertisements, to television receivers. In that case, the store and forward server also collects and categorizes the selection information associated with e-mail and quantifies the selection information for revenue tracking purposes. In this tier, providing auxiliary information, such as advertisements, subsidizes the cost of the E-mail service and may, in fact, allow for "free-mail". However, since the server delays the transmission of data so as to be economic, still other tiers of the system may provide for accelerated E-mail communication service and possibly also connection to the Internet upon the payment of fees by the consumer. Such an e-mail server 111 and Internet server 112 are shown in Fig. 1.

The auxiliary information may also contain software for operating the television receiver or for providing an additional functionality to it, such as video games or personal computer functions including, e.g., word processing and spread sheet programs. To the extent that the television receiver itself has insufficient data processing capability itself, e.g., insufficient memory, such data

processing may be shared from a personal computer linked to the television receiver via a bus.

Another aspect of such an apparatus provides for integrating a web browser and either an Ethernet or HomePNA interface for networking. Connecting the apparatus to a personal computer (PC) enhances the functionality by being able to download software applications, such as a word processor or spreadsheet, from the PC. Further, the apparatus could utilize the PC for data storage or for printing. A network connection would enable storing a URL directly and/or automatically on the PC.

In Figure 1, a television program signal source 104 combines a television program signal 104a with an auxiliary information signal 104b, such as an advertisement, to produce an enhanced television program signal 115 that is supplied to the video server 102. Also supplied to the server is an enhanced electronic program guide (EPG) signal from an electronic program guide signal source. The enhanced EPG signal represents a combination of an EPG signal 116 representative of program guide information 105a and a second auxiliary information signal 105a, such as an advertisement. Thus, auxiliary information such as advertisements may be included with either or both of the video and EPG signals.

The video server 116 communicates a signal comprising the enhanced television signal and/or the enhanced EPG signal to a video signal processing device, such as TV receiver 101, via a television communication channel. As described above, a back channel from the video signal processing device, e.g., TV, is provided via means of a device such as a modem 106. The back channel couples the video signal processing device 101 to a store and forward server 110 where data is stored and processed before being forwarded to other destinations. For example, packets of data may be forwarded to advertisers or others communicating auxiliary information to a viewer. The store and forward server 110 also provides a link between the email server 111 and internet server 112 that provide respective email and internet connection services to users in accordance with the tier of service to which the user subscribes. An auxiliary information signal may also be coupled to the system via the email server 111.

In FIG. 2, auxiliary information, such as advertisements for the television program "Friends" 205 and for Carnival Cruise Lines 206, is shown displayed with EPG information 210 and with video program information 215 such as the television program "ER". The video program window 215 could be larger or smaller as could the display regions associated with the auxiliary information 205 or 206 and the EPG information 215. Also, three types of display regions are shown simultaneously in FIG. 2 (i.e., video or television program, auxiliary information, and EPG regions), a display might include only one or only two of the three regions. For example, FIG. 3 shows auxiliary information, such as advertisements 305 and 306 displayed with EPG information 310 and without video or television program information.

As discussed above, program guide information are being provided to set-top boxes and televisions in satellite, cable, terrestrial, etc. systems to include, for example, advertisements. These advertisements may either be hard-coded into the receiving unit's software, or they are downloaded via the auxiliary signal distribution system.

As mentioned previously, current systems display advertisements in a program guide screen based on time descriptors in the advertisement. These time descriptors are used by the receiver to control when the advertisement is made visible in the guide display. This method provides for poor control of advertisement exposure. It is the responsibility of the distribution system to define, using time descriptors, when an ad is to be displayed, without knowing any habit of the viewers. Furthermore, the time descriptors will not allow the presentation of the ads to be synchronized with the consumer's navigation within a program guide display.

In accordance with the present invention, the present inventors recognize that a consumer navigating through a program guide display, his or her focus changes from one program to another. Therefore, the guide advertisements should be adjusts accordingly, to achieve the maximum results. If the consumer is attracted by the advertisement, he or she is only one or two button presses from viewing the advertised program.

The present method of channel and time specific advertisement placement can be done using information being displayed in the program guide screen as well as new descriptors in the advertisement's data. The channel numbers of the channels being displayed in the guide along with new descriptors in the advertisement's data such as a Channel Id and/or Program Id, can be used to present a channel/program-specific advertisement. This allows for the following. When the consumer scrolls through a program guide display and highlights or is about to highlight a program on a channel, a catchy advertisement specific to that program can be started which will lure the consumer to tune to that program.

The placement of a particular advertisement in the program guide according to the present invention, may be controlled as shown, for example, in the flow chart of Fig. 4 and described in detail below. As shown in Fig. 4, when the consumer displays the program guide as shown in step 401, a software process called, for example, Advertisement Manager 400, queries the Channel and Program Specific (CPS) advertisement queue, as in step 402. This queue is maintained by a separate process as shown in Fig. 5.

The Channel and Program Specific advertisement queue process shown in Fig. 5 will obtain advertisement information from advertisement data sent as the auxiliary information signal of the enhanced television program signal 104 or electronic program guide signal source 105, as shown in step 501. In step 502, a determination is made to see whether a particular advertisement received is subject to be displayed based on consumer navigation. This is done by looking at, for example, a control bit in the advertisement data. If the determination is affirmative, as in step 504, this particular advertisement will be placed in the CPS queue to be used by Advertisement Manager 400 as described below.

Continue on step 403 of Fig. 4, the Advertisement Manager 400 check to see if CPS advertisements exist from the CPS queue. The Advertisement Manager 400 then wait for some type of consumer navigation, in step 405. This can be done, for example, by monitor the highlight position of a cruiser or user key entries on the remote. It then checks the channel and program information of each ad and compares it to the channels and programs being highlighted in the

guide screen, in step 406. This is done, for example, when the guide display is scrolled or paged with respect to time or channels or when new guide data is presented on the screen. If the channel descriptor of an ad matches one of the channels being displayed or very shortly about to be displayed, determined by monitoring the direction of scroll within the guide, the Advertisement Manager 400 compares the program descriptor of the ad with the program being displayed in the guide. If the channel and program information correspond, the ad is displayed, as in steps 406 and 407. Otherwise, the Advertisement Manager 400 continues to monitor the CPS ad queue and/or display non-CPS ads, as in steps 402, 403 and 404.

It will be readily apparent to those skilled in the art that the teachings of the present invention described above may be applied to a television, VCR, settop boxes, a video storage and playback unit such as a Tivo, etc., without departing from the true scope of the claims appended hereto.

CLAIMS

1. A method of displaying a targeted advertisement on an electronic program guide based on consumer navigation, comprising the steps of:

receiving a plurality of advertisements through an auxiliary source in a television apparatus.

storing the received advertisements along with their respective descriptor;

monitoring navigation of a user of the electronic program guide; and

displaying a selected advertisement from said stored advertisements in response to the navigation monitoring.

2. The method of claim1 wherein the descriptor comprises a channel descriptor.

3. The method of claim 2 wherein the advertisement is selected for displayed in the displaying step when the channel descriptor of the selected advertisement matches the channel highlighted by the user.

4. The method of claim 2 wherein the descriptor further comprises a time descriptor.

5. The method of claim 4 wherein the advertisement is selected for displayed in the displaying step when the channel descriptor of the selected advertisement matches the channel highlighted by the user and the time descriptor of the selected advertisement matches a current time.

6. The method of claim 1 wherein the auxiliary source in the receiving step is through a television communication channel.

7. A method of displaying a targeted advertisement on an electronic program guide based on consumer navigation, comprising the steps of:

storing a plurality of preprogrammed advertisements along with their respective descriptor in a television apparatus;

monitoring navigation of a user of the electronic program guide; and

displaying a selected advertisement from the stored advertisements in response to the navigation monitoring.

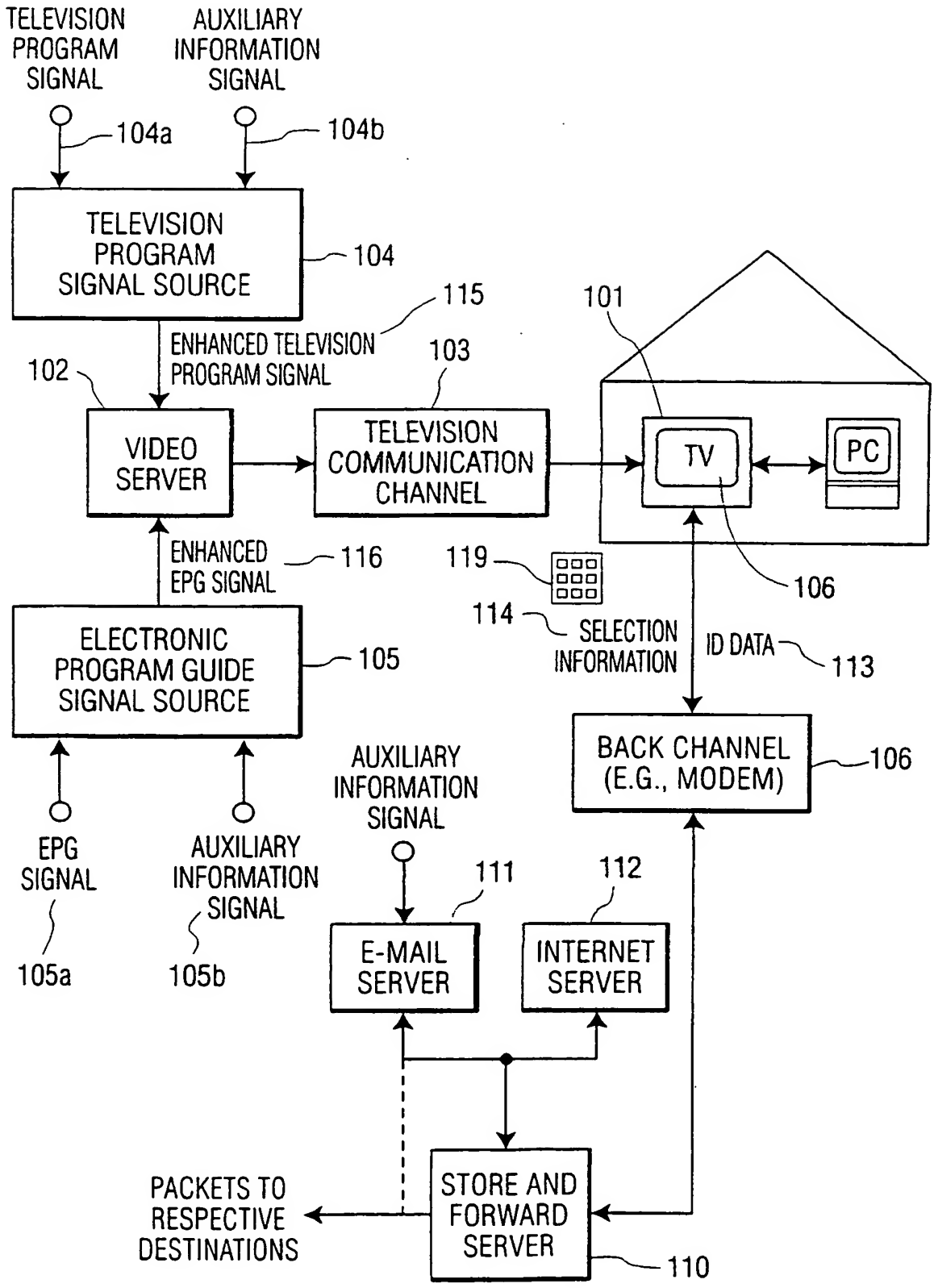
TELEVISION PROGRAM SIGNAL
AUXILIARY INFORMATION SIGNAL
104a
104b
TELEVISION PROGRAM SIGNAL SOURCE
104
115
ENHANCED TELEVISION PROGRAM SIGNAL
101
102
103
VIDEO SERVER
TELEVISION COMMUNICATION CHANNEL
TV
PC
ENHANCED EPG SIGNAL
116
119
106
114
SELECTION INFORMATION
ID DATA
113
ELECTRONIC PROGRAM GUIDE SIGNAL SOURCE
105
BACK CHANNEL (E.G., MODEM)
106
AUXILIARY INFORMATION SIGNAL
EPG SIGNAL
AUXILIARY INFORMATION SIGNAL
111
112
E-MAIL SERVER
INTERNET SERVER
105a
105b
PACKETS TO RESPECTIVE DESTINATIONS
STORE AND FORWARD SERVER
110

FIG. 1

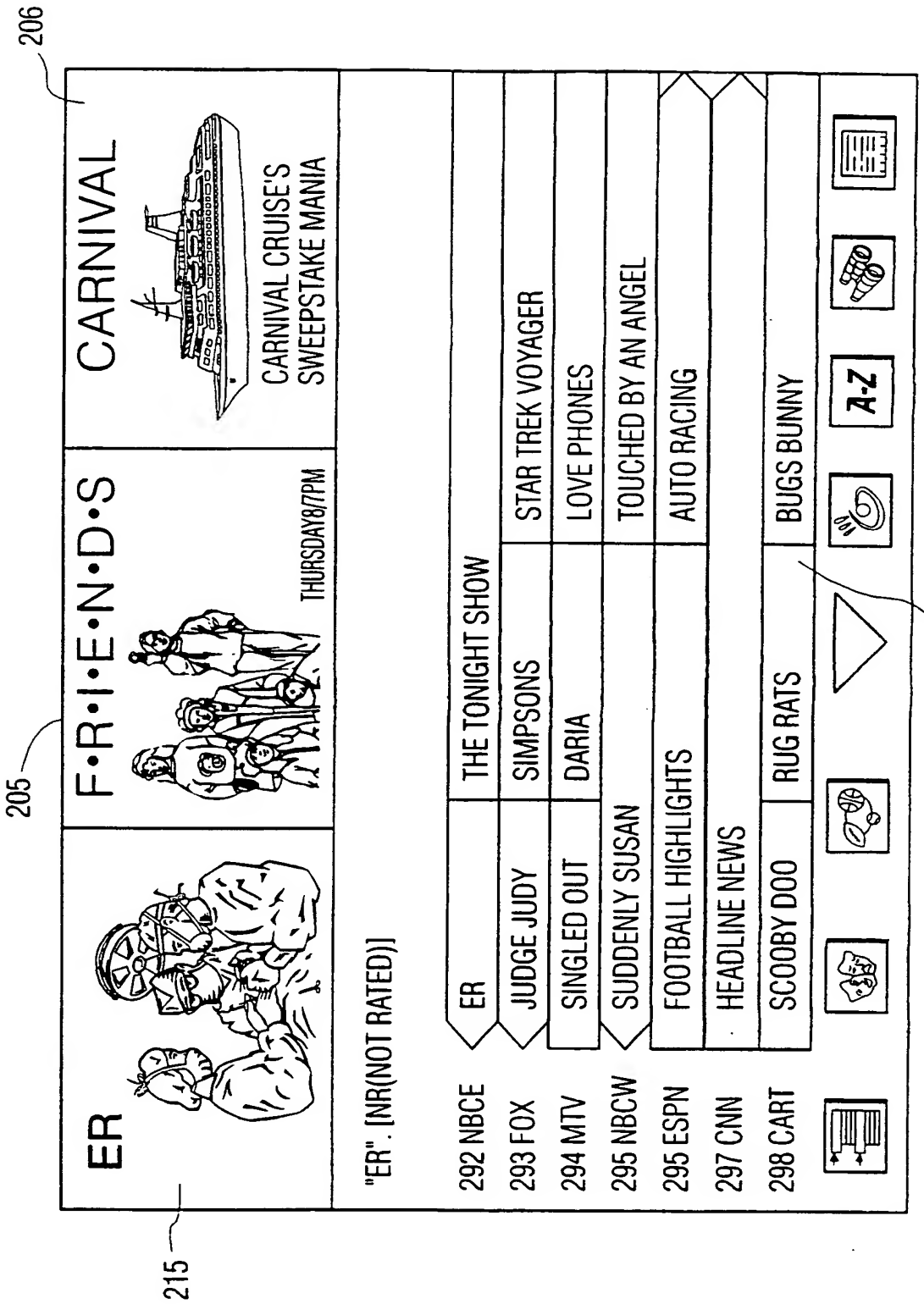
206
205
215
210
ER
F·R·I·E·N·D·S
THURSDAY8/7PM
CARNIVAL
CARNIVAL CRUISE'S
SWEEPSTAKE MANIA
"ER". [NR(NOT RATED)]
292 NBCE
293 FOX
294 MTV
295 NBCW
295 ESPN
297 CNN
298 CART
ER
THE TONIGHT SHOW
JUDGE JUDY
SIMPSONS
STAR TREK VOYAGER
SINGLED OUT
DARIA
LOVE PHONES
SUDDENLY SUSAN
TOUCHED BY AN ANGEL
FOOTBALL HIGHLIGHTS
AUTO RACING
HEADLINE NEWS
SCOOBY DOO
RUG RATS
BUGS BUNNY
A-Z

FIG. 2

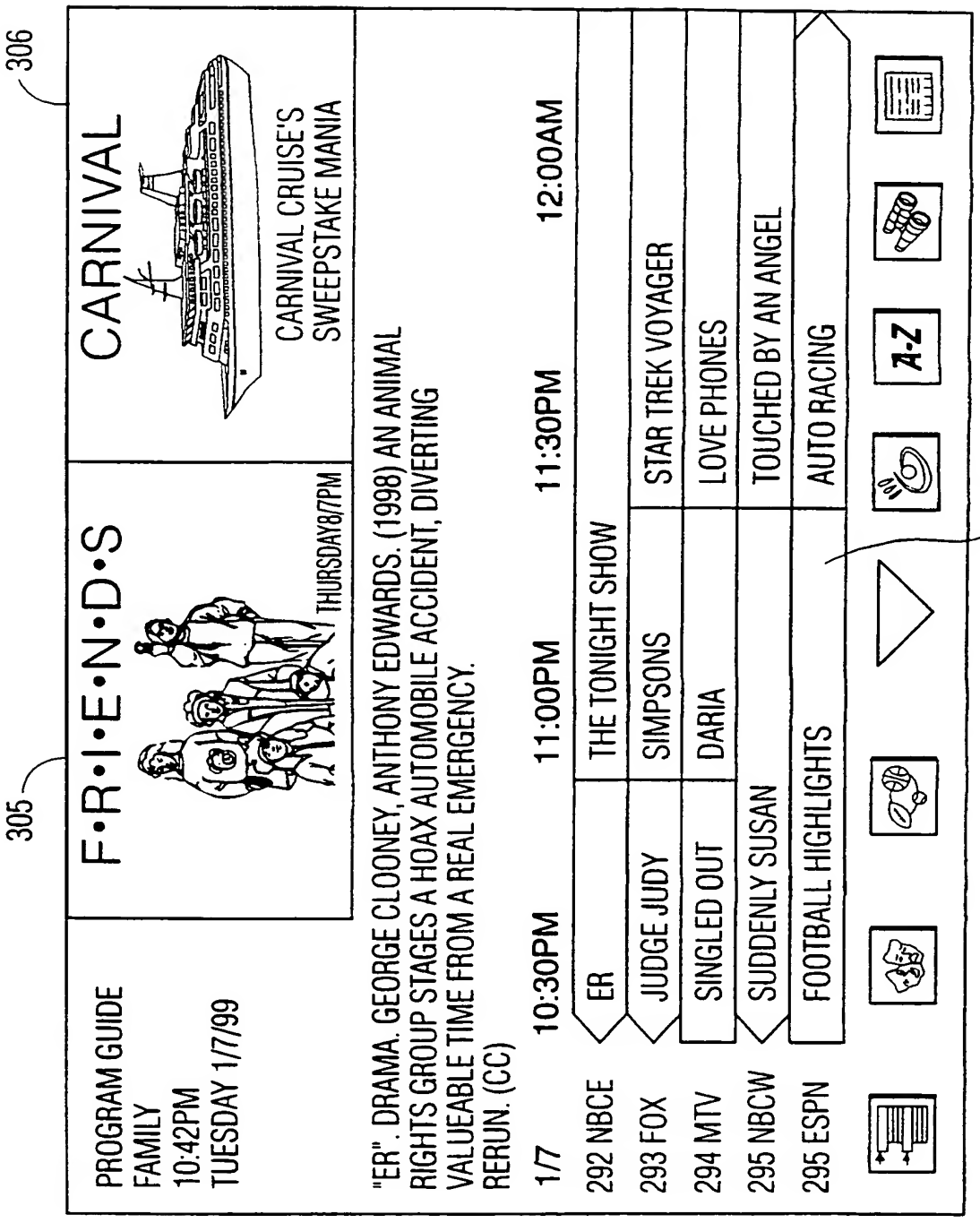
306
305
PROGRAM GUIDE
FAMILY
10:42PM
TUESDAY 1/7/99
F•R•I•E•N•D•S
THURSDAY8/7PM
CARNIVAL
CARNIVAL CRUISE'S
SWEEPSTAKE MANIA
"ER". DRAMA. GEORGE CLOONEY, ANTHONY EDWARDS. (1998) AN ANIMAL
RIGHTS GROUP STAGES A HOAX AUTOMOBILE ACCIDENT, DIVERTING
VALUEABLE TIME FROM A REAL EMERGENCY.
RERUN. (CC)
1/7
10:30PM
11:00PM
11:30PM
12:00AM
292 NBCE
ER
THE TONIGHT SHOW
293 FOX
JUDGE JUDY
SIMPSONS
STAR TREK VOYAGER
294 MTV
SINGLED OUT
DARIA
LOVE PHONES
295 NBCW
SUDDENLY SUSAN
TOUCHED BY AN ANGEL
295 ESPN
FOOTBALL HIGHLIGHTS
AUTO RACING
A-Z
310

FIG. 3

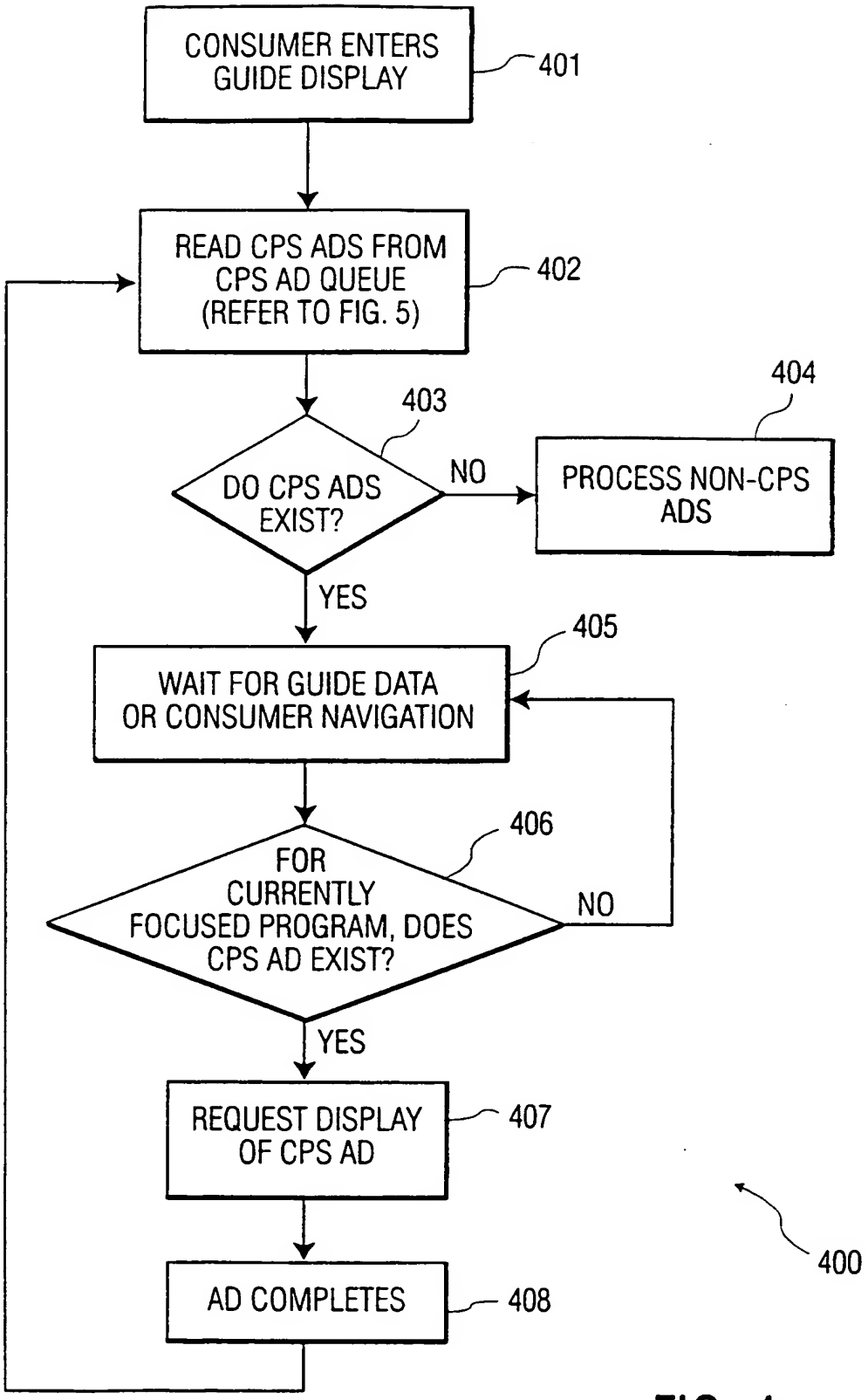
CONSUMER ENTERS GUIDE DISPLAY
401
READ CPS ADS FROM CPS AD QUEUE (REFER TO FIG. 5)
402
403
DO CPS ADS EXIST?
NO
404
PROCESS NON-CPS ADS
YES
405
WAIT FOR GUIDE DATA OR CONSUMER NAVIGATION
406
FOR CURRENTLY FOCUSED PROGRAM, DOES CPS AD EXIST?
NO
YES
REQUEST DISPLAY OF CPS AD
407
AD COMPLETES
408
400

FIG. 4

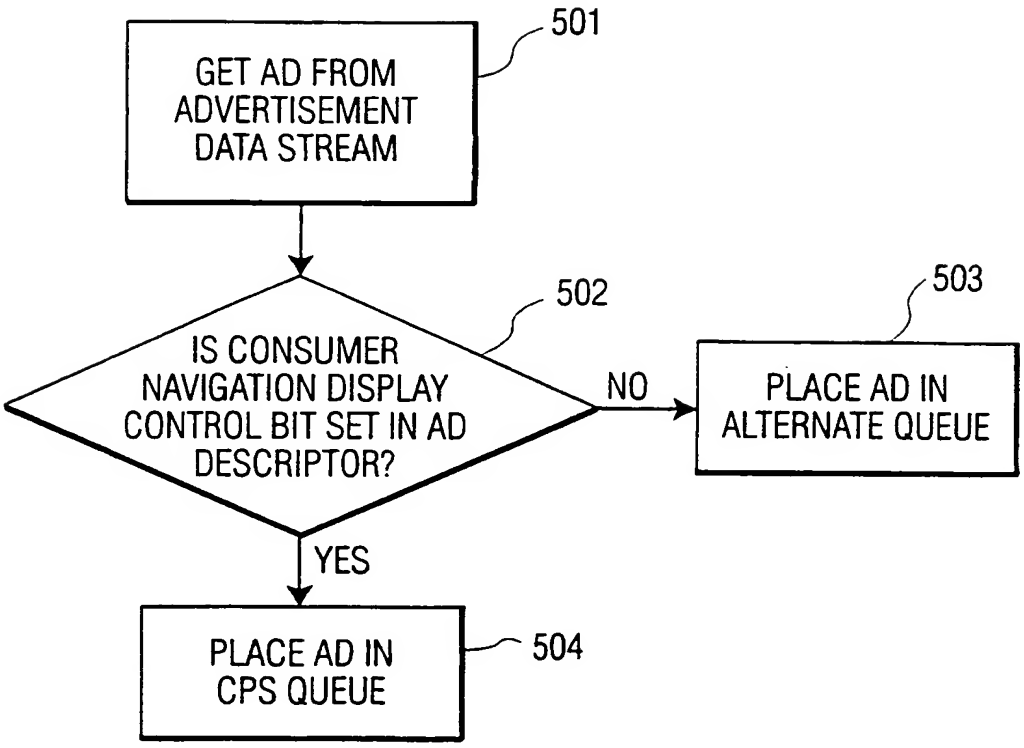
GET AD FROM ADVERTISEMENT DATA STREAM
501
IS CONSUMER NAVIGATION DISPLAY CONTROL BIT SET IN AD DESCRIPTOR?
502
NO
PLACE AD IN ALTERNATE QUEUE
503
YES
PLACE AD IN CPS QUEUE
504

FIG. 5

INTERNATIONAL SEARCH REPORT

Inter nal Application No
PCT/US 00/11373

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N5/445 H04N7/173 H04N7/088 //H04H9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 00975 A (THOMSON CONSUMER ELECTRONICS INC.) 8 January 1998 (1998-01-08) page 2, line 13 -page 3, line 37 page 5, line 5 - line 31 page 6, line 30 -page 11, line 33 page 18, line 12 - line 32	1-7
X	US 4 888 638 A (BOHN J.) 19 December 1989 (1989-12-19) the whole document	1-7
Y	US 5 710 601 A (MARSHALL C. ET AL) 20 January 1998 (1998-01-20) column 3, line 24 -column 4, line 32	1-7

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11 August 2000	21/08/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Verschelden, J

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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